RESPONSE TO COMMENTS

REGARDING THE RESISSUANCE OF THE FOLLOWING NPDES PERMIT

EASTMAN GELATINE CORPORATION MA0003956

Introduction:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited public comments from May 24, 2006, through June 22, 2006 on the draft National Pollution Discharge Elimination System (NPDES) permit to be issued to Eastman Gelatine Corporation.

The Draft NPDES Permit is for the discharge of non-contact cooling water and storm water. The facility discharges to Goldthwait Brook.

During the public-notice (comment) period EPA-New England received comments from the permittee, Eastman Gelatine Corporation (Eastman) and from the Commonwealth of Massachusetts Riverways Program (Riverways).

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit and any appropriate changes made to the public-noticed draft permit as a result of the comments. The Final Permit is substantially identical to the draft permit that was available for public comment. Although EPA's decision making has benefited from the comments submitted, the information and arguments submitted did not result in any substantial new changes to the permit. EPA did, however, improve certain requirements in the permits as a result of the comments raised. These improvements and changes are further explained in this document and are reflected in the Final Permit.

Changes Made to the Final Permit

1. **Part I.B. has been amended to encourage infiltration of non-metal roof runoff.**
2. **Sampling schedule for storm-water-only outfalls has been amended to allow quarterly, rather than monthly pH and flow monitoring. The time frame for the rain water pH study has been extended from eighteen months to three years to accommodate quarterly pH monitoring.**
3. **Part I.A.2 has been amended to require that one representative grab sample, rather than the composite of several samples be collected of roof runoff from Building 13A and from Building 4A. The representative samples are outfall 007 (runoff from Building 13A) and outfall 05A (runoff from Building 4A). Footnote 1 on page 4 of the permit was amended to remove language regarding collection of composite samples.**
4. **Part I.A.1 has been amended to limit allowable temperature impact on Goldthwait Brook.**
5. **Continuous flow monitoring is required for all cooling water except for eye wash water which will continue to be estimated.**
6. **The WET test sampling schedule has been revised.**

Comments from Paul Carter, Services Manager, Eastman Gelatine, Corporation

COMMENT NO. 1

Discharges of non-contact cooling water from the eyewash stations located in very warm areas of the gelatin process and power plant areas are not readily amenable to metering. Since the flow rate of each eyewash station is relatively constant and discharge occurs whenever the facility is operating, EGC respectfully requests that EPA accept an estimate of the average daily amount of non-contact cooling water discharged from these in lieu of an actual metered quantity.

RESPONSE NO. 1

EPA agrees that an estimate of the daily amount of non-contact cooling water discharged from the eyewash station will adequately address this smaller and constant discharge.

COMMENT NO. 2

The annual analytical cost under the current and draft permits are estimated to be $1,680 and $7,800, respectively. It is worth noting that both of these figures neglect costs associated with the labor necessary to conduct sampling.

While EGC can appreciate EPA's desire to have amore complete set of data for outfalls that exclusively discharge storm water, EGS is doubtful that it will be possible to conduct monitoring as specified in the draft permit due to the inconsistent nature of qualifying storm water monitoring events coupled with the limited resources allocated to conducting monitoring and the increase in analytical costs that this level of monitoring represents.

A proposed sampling schedule, which more accurately reflects the ability of EGC to conduct outfall monitoring is as follows: Monitor each outfall semi-annually for oil & grease, total suspended solids, pH, copper, lead and zinc.

RESPONSE NO. 2

EPA's intention in increasing the frequency of sampling is to collect enough data on a regular basis to identify problem areas in storm water management. The purpose of monthly monitoring was to collect a statistically significant body of data. The draft permit allowed for a decrease in monitoring following at least 12 consecutive rounds of sampling (Part I.A.12).

EPA recognizes the logistical and economic challenges to collecting the data. Therefore, EPA has reduced the frequency of monitoring for pH from monthly to quarterly and reduced the number of consecutive rounds of sampling required (before requesting a decrease) from 12 to 10 sampling events. Quarterly monitoring will ensure that a significant rain event can be monitored during the quarterly monitoring period, yet still allow for a timely collection of statistically significant data.

In addition, EPA has determined that one representative sample, rather than composite of several samples, may be collected of roof runoff from Building 13A and from Building 4A.

Comments from Cindy Delpapa, Massachusetts Riverways Program

COMMENT NO. 3

The discharge of non contact cooling water from this facility into Goldthwait Brook represents a significant point source into this impaired waterway and we are pleased this

permit is being updated and reissued given the age of the existing, administratively continued permit. The narrative in the Fact Sheet indicates the base flow in Goldthwait Brook can be seasonally nonexistent leaving the effluent discharge as the sole flow in this brook. It should be noted Goldthwait Brook flows into the North River and onto Salem Sound. Currently, North River has a struggling and significantly impaired anadromous fish run and Salem sound has shellfish beds as well as sport fisheries. The discharge from this facility should be put into the context of impacts on Goldthwait Brook and on the larger watershed system, too.

The draft permit has lowered the average monthly effluent discharge volume based on the anticipated reduction in need at the facility. This reduction in discharge is welcome though it would be interesting to have more information in the Fact Sheet citing Goldthwait Brook as a source of recharge for the water supply wells upstream of the discharge providing 2 mgd of process water to the facility. The withdrawals may be negatively influencing the base flow in Goldthwait Brook leading to unnatural instances of low and no flow- reducing the available dilution and assimilative capacities of the receiving water- and a disruption in the natural flow regime in the brook. Hopefully a reduction in cooling water translates in to a reduction in withdrawals from the Bleachery wells.

RESPONSE NO. 3

By recycling and energy conservation, Eastman Gelatine has reduced its need for cooling water, most of which has traditionally come from the Bleachery Wells. Consequently, there has been a reduction in withdrawals from the Bleachery Wells for cooling water use.

EPA agrees with the concern for the health of the Salem Harbor watershed and Goldthwait Brook, in particular, in this case. Groundwater withdrawals along with impervious surfaces which abound in this largely urban watershed have contributed to increases in flooding and loss of flow during dry times of the year. Although groundwater withdrawals are out of the scope of the NPDES permit program EPA can provide incentives to promote groundwater discharge rainwater that has minimal potential for pollutant contact. In order to encourage recharge of storm water into the Goldthwait Brook watershed, EPA has amended part I.B. of the permit to encourage infiltration of non-metal roof runoff rather than direct discharge to Goldthwait Brook.

COMMENT NO. 4

Since the effluent flow may frequently comprise all or most of the flow in the Brook, it is important the effluent meet water quality standards and not contribute to the toxicity issues and impairments of the receiving waters. Massachusetts Class B water quality standards have an upper temperature limit AND a maximum allowable change in temperature, (Δt) of 5^{o}F. We strongly advocate for the addition of this limitation for temperature change in order to prevent a violation in Massachusetts water quality standards. Under no flow conditions, the calculation of the temperature change would be problematic so it may be necessary to ascertain the water temperature of the Brook at some upstream, flowing location or to determine the Δt using the downstream North River. The frequency of monitoring, once per week, is also a concern. We would like to suggest the permit include more detail on when the temperature will be monitored to the maximum temperature is captured during the week though it seems preferable to require

daily temperature sampling capturing the maximum flow and/or peak temperature of the effluent. If daily temperature monitoring is not adopted we would like to advocate for at least more frequent monitoring during low and no flow conditions when the effluent dominated flow in the Brook would produce the most impact to the aquatic ecosystem of the receiving waters. Daily monitoring under these effluent dominated conditions would provide more information about the stresses to this impaired waterway.

RESPONSE NO. 4

EPA agrees that, based on Massachusetts water quality standards for warm water fisheries, the maximum allowable change in temperature in Goldthwait Brook due to the cooling water discharge from Outfall 001 should not be greater than 5ºF. The permit has been changed to include a limit to the allowable temperature impact on Goldthwait Brook, consistent with the Massachusetts NPDES General Permit for Noncontact Cooling Water (MAG250000).

Eastman expects to continue to reduce their cooling water flows in the coming months as new procedures are implemented at the facility. During the past 5 years, temperatures have ranges from 37ºF to 80º F with consistently cooler temperatures in the winter months and warmer temperatures in the summer months and within the permit limits. EPA disagrees that more frequent temperature monitoring is required.

COMMENT NO. 5

The temperature of the storm water discharges should not be overlooked as a contributing factor to potential stress and water quality excursions. Rainwater flowing over hot pavement and metal roofs can increase temperature of the runoff markedly. This rainwater, combined with the heated non-contact cooling water effluent, can result in a significant influx of heated water into this impaired waterway. Temperature monitoring during the first flush would add valuable information to the discussion on how to remediate the known and unknown causes of impairment in Goldthwait Brook.

RESPONSE NO. 5

The storm water collection system at Eastman does not include any storage ponds or other impoundments that would result in significant warming of water in Goldthwait Brook. Although rain water does have the potential to absorb heat from pavement and rooftops, the buried collection and discharge piping provide some mitigating cooling. EPA finds that temperature monitoring of storm water outfalls is unnecessary.

COMMENT NO. 6

Temperature monitoring is an important component to ensuring the effluent does not result in exceedances of the State's water quality standards. Adding a dissolved oxygen (DO) minimum to the permit is equally important. With temperature and oxygen levels inversely proportional, instituting a dissolved oxygen minimum would be a critical assurance that the water quality standards will be maintained in the receiving water especially under no and low flow conditions. The permittee should be required to meet the Class B water quality standard for DO of ≥ 5 mg/l. Some guidance concerning when and how to measure the DO would be appropriate and we would like to recommend monitoring coincide with typical lows in stream DO, (early morning) to determine if the effluent may be exacerbating a stressful situation. The importance of incorporating a

dissolved oxygen limitation is supported by the known dissolved oxygen impairment in Goldthwait Brook.

RESPONSE NO. 6

Storm water discharges from Eastman are unlikely to contain organic matter that would contribute to lowering the dissolved oxygen levels in Goldthwait Brook. Organic material used or stored on site includes crushed bone and gelatin. The manufactured gelatin is stored indoors and loading directly onto trucks at truck loading docks. The crushed bone is shipped to the facility and temporarily stored in covered rail cars out doors and loaded directly. The rail car storage tracks are surrounded by containment berms. Storm water falling within the containment areas are pumped to the on-site wastewater treatment facility and pre-treated prior to off-site disposal. Crushed bone is also relatively insoluble and unlikely to contribute to dissolved oxygen impairments in Goldthwaite Brook. Therefore, EPA finds that permit conditions to monitor or control effluent dissolved oxygen are unnecessary.

COMMENT NO. 7

Maintaining a whole effluent toxicity testing requirement in the permit is a sound decision given the status of the waterway and the negligible dilution. The facility has had some issues with the whole effluent toxicity testing (WET) though recent testing has been acceptable which supports a twice per year testing schedule, despite the negligible dilution ratio. We do wonder if the time of the WET testing is the most fortuitous. The June and December sampling dates would fail to capture the low flows of late summer of the sensitive anadromous spawning season of the smelt in the North River. We would like to urge the regulating agencies to consider a change in the testing schedule based on the aquatic life cycles in the Goldthwait/North River system and how an appropriately timed WET test might better reflect the potential negative influence of the discharge on aquatic species.

RESPONSE NO. 7

EPA agrees that the WET sampling (indicated in the permit to be in May and November) would be best done during more reliable low flow periods. The permit has been revised to indicate June and September as WET sampling months.

COMMENT NO. 8

The wet weather monitoring and limitations are important and welcome components of this permit as the runoff has the potential to impact this small waterway and contribute to water quality standard exceedances. It would be helpful to have a more thorough understanding of the amount of storm water and snow melt entering Goldthwait Brook from this facility. This could be achieved by requiring a flow estimate for each event that results in the discharges from the outfall pipes. This information coupled with the other data required by the permit would provide regulators and managers a more complete picture of the loadings into this impaired stream and strategies on how to tweak the BMPP and other control measures should there be areas needing improvement.

RESPONSE NO. 8

Eastman already estimates storm water flows using the event's accumulated rainfall (reported locally) and the drainage area contributing to each outfall. The permit requires this estimate for

each storm water outfall or composite outfall on a monthly basis. Table 6-1 in the Fact Sheet shows the drainage area for each outfall that is used to generate flows for each rain event.

COMMENT NO. 9

The monitoring already performed on wet weather discharges indicates relatively consistent problems with elevated metals concentrations. The current permit expired over a decade ago. Given this lapse in time and the existing metals data, we would like to urge further consideration be given to instituting metals limitations for the wet weather discharges from this facility in this permit round and not delay instituting permit limits. Downstream resources include shellfish beds, an anadromous fish run and a recreational fishery in Salem Sound. Metals pose a threat to all of these sensitive resources and every effort to control metal loadings should be considered. It is also possible the metals are contributing to the unknown toxicity noted in the impaired waters listing for this segment. We would also like to promote monitoring of Polycyclical Aromatic Hydrocarbons (PAHs) in the wet weather runoff. PAHs are often a significant component of runoff from paved surfaces and industrial facilities. Monitoring would provide information on the PAH concentration from this facility flowing into the North River system. Again PAHs from this site may be a contributor to the unknown toxicity in Goldthwait Brook.

RESPONSE NO. 9

Metals

Since Eastman does not handle or process materials containing high concentrations of toxic metals, the source of elevated metals concentrations in the storm water discharges are likely to be: dirt washed off pavement by rainwater, fragments of aging metal pipes that wash into the storm water, corrosive rainwater leaching metals out of metal roofs and pipes. With the new requirement to monitor suspended solids, a study to evaluate potential sources of low pH discharges, and by continuing to monitor metals at lower detection limits, EPA is committed to identifying and mitigating potential sources of toxic metal contribution to Goldthwait Brook.

PAHs

EPA disagrees that Eastman is a significant potential source of PAH toxicity in Goldthwait Brook. Eastman has one million-gallon storage tank used to store number 6 fuel oil for use in the facility's boilers. The tank is contained within a bermed containment area. Storm water that collects within the containment area is treated in the on-site wastewater treatment plant and discharged to the Peabody sewer system.

COMMENT NO. 10

The wet weather monitoring sampling procedures call for sampling within 2 or 4 hours, depending on when the rain event begins. How was the timing of the sampling derived? Is it possible the 2 to 4 hour delay in sampling might result in missing the 'first flush" of runoff which typically contains the highest levels of pollutants? Does the rain even sampled have to be of a certain size, (such as on quarter inch of precipitation) or occur after a reasonable length of time since the last rain event (such as 48 or 72 hours since a previous rain event)?

RESPONSE NO. 10

The two hour time frame reflects the amount of time necessary to sample so many of outfalls during the same time event. The four hour time frame reflects an opportunity to sample rain events that many have commenced prior to the beginning of the working day, but that may be one of very few substantial rain events in any given monitoring period. The rainfall event must be of a size to generate discharge at the storm water outfalls. However, there is no minimum size specified in the permit.

COMMENT NO. 11

Total suspended solids are to be measured quarterly from the stormwater outfalls. Since there is a struggling fishery in the North River, we would like to suggest more frequent monitoring of the TSS concentration and a requirement to estimate the load of TSS entering the receiving waters since TSS may result in impairments to spawning habitat and to fish physiology.

RESPONSE NO. 11

EPA agrees that total suspended solids (TSS) may contribute to impairments in the receiving water. However, EPA finds that the new quarterly monitoring requirement for TSS, which is typical of storm water monitoring requirements at similar industrial facilities, will provide adequate data to assess the TSS load entering Goldthwait Brook. No permit changes are necessary.